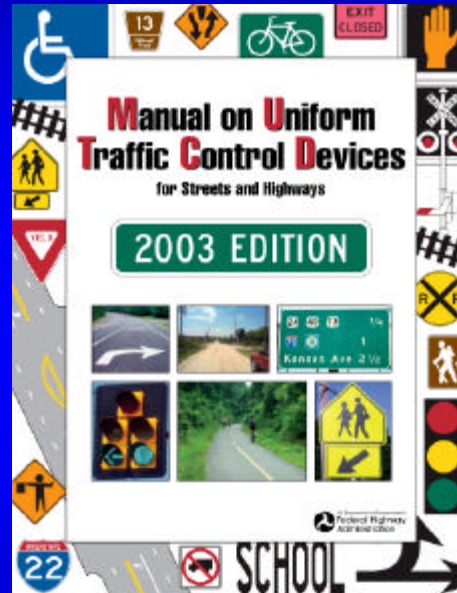


MUTCD Adoption



May 20,
2004



(TCD Chapters 4, 5, 6, 8,
10, 11, 12 & Signals
part of Chapter 9)





Traffic Manual



May 20,

2004

Status is Historical Reference Only

**(For TCD Chapters 4, 5, 6, 8,
10, 11, 12 & Signals
part of Chapter 9)**



Caltrans Traffic Manual



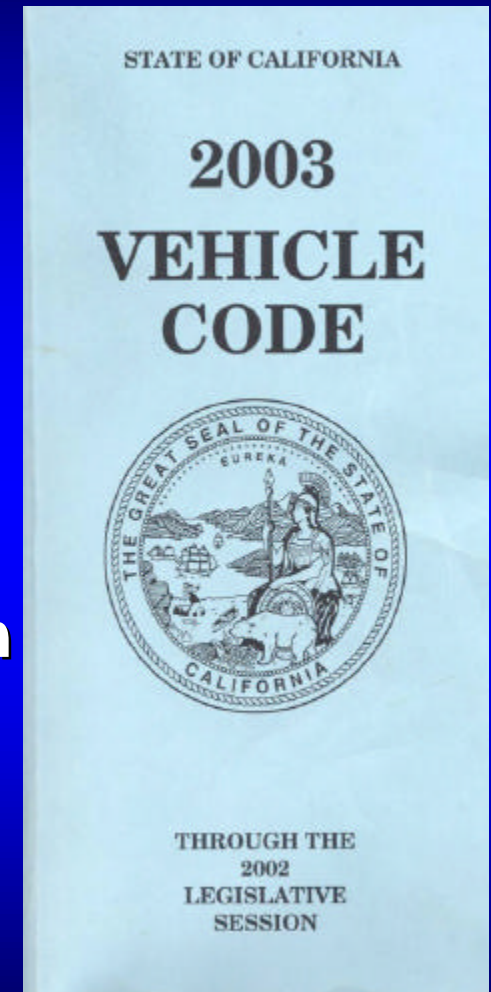
- <http://www.dot.ca.gov/hq/traffops/signtech/signdel/trafficmanual.htm> (for non-TCD portions)
- TCD portions superseded May 20, 2004



Why the TM or Supplement?



- All TCDs on all streets and highways open to public travel in CA must conform to Caltrans adopted rules & regulations subject to the provisions of CVC.



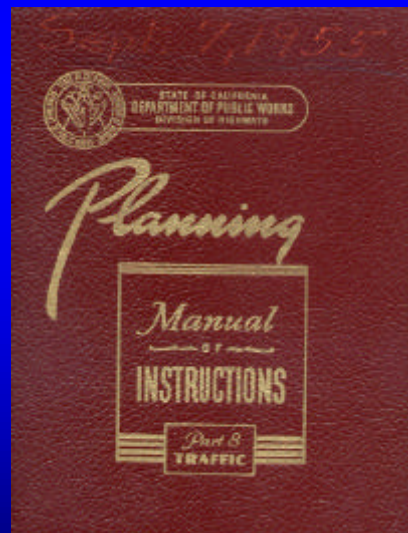
Evolution of Traffic Manual

1920s – Automobile Club Pamphlets

1927 - MUTCD

1945 – Chapter in Maintenance Manual

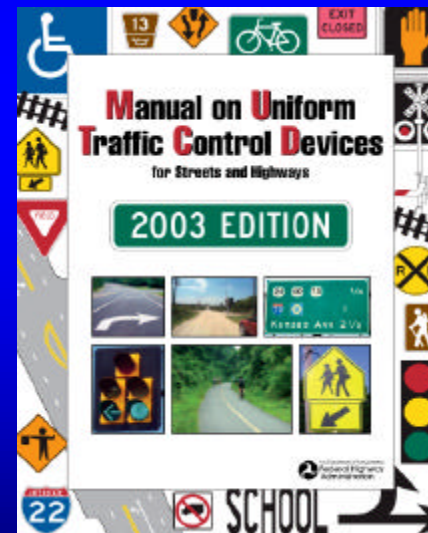
MUTCD 2003 + CA Supplement



1955



1972 - English
1996 - Metric



2004

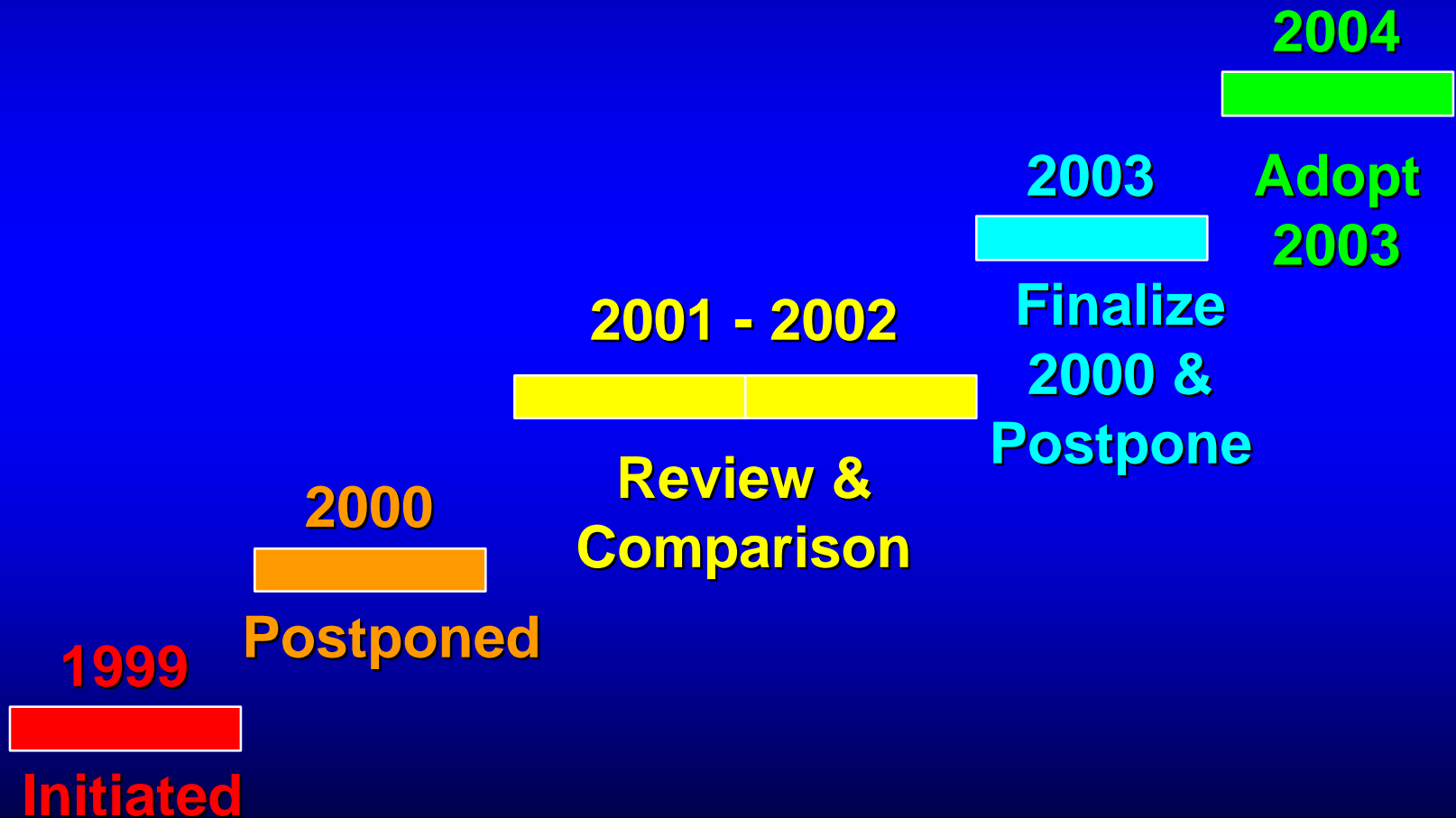


Why adopt the MUTCD?

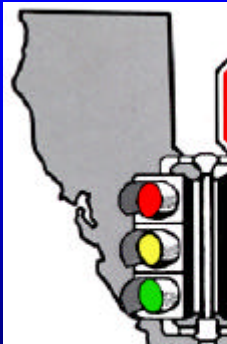
- In 1992 NCUTCD initiated a major effort to change the MUTCD
- MUTCD 2000 is major update from 1978
- TM is based on MUTCD and vice versa
- MUTCD revisions more frequent, difficult to track
- Inter-mixed standards create conflicts and confusion, need to eliminate duplication
- Promote national uniformity
- Provide clarity by separating CA standards



MUTCD Adoption Summary




California Traffic Control Devices Committee (CTCDC)

- **CVC 21400: consult with local authorities**
 - **Considers proposals for new or non-standard TCDs**
 - **Includes Cities, Counties, Auto clubs, CHP & Caltrans**
 - **Meets 3 to 4 times a year**
 - **Next meeting in Oakland December 8, 2004**
- 
- A graphic in the bottom right corner showing a map of California. Overlaid on the map is a traffic light with the red light illuminated. The traffic light is positioned over the southern part of the state, near the San Francisco Bay Area.



CTCDC

- **John Fisher, Chairman, City of Los Angeles**
 - **Farhad Mansourian, Vice Chairman, Marin County**
 - **Gerry Meis, Caltrans**
 - **Merry Banks, CSAA**
 - **Jacob Babico, San Bernardino County**
 - **Capt. Lenley Duncan, CHP**
 - **Ed von Borstel, City of Modesto**
 - **Hamid Bahadori, ACSC**
 - **Devinder Singh, Secretary, Caltrans**
- 
- A small graphic in the bottom right corner of the slide. It shows a gray silhouette of the state of California. Overlaid on the bottom right corner of the map is a traffic light with three circular lights: the top one is red, the middle one is yellow, and the bottom one is green. The traffic light is depicted as a vertical pole with the lights stacked on top of each other.



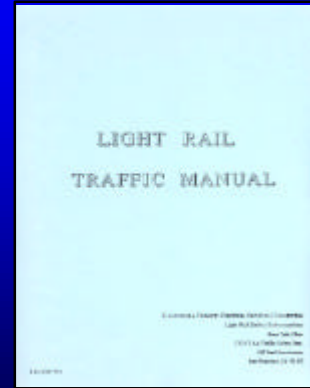
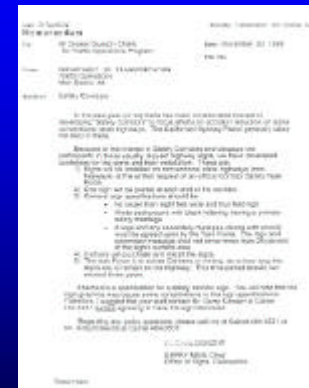
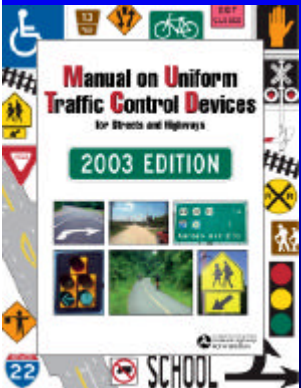
Supplement Advisors

- **Caltrans Headquarters staff – Owners of individual Parts**
- **Caltrans District Staff – Field implementation expertise**
- **FHWA Representatives – National perspective**
- **CTCDC Workshops – Local agencies expertise**
- **CPUC Representatives – Railroad & Light Rail expertise**

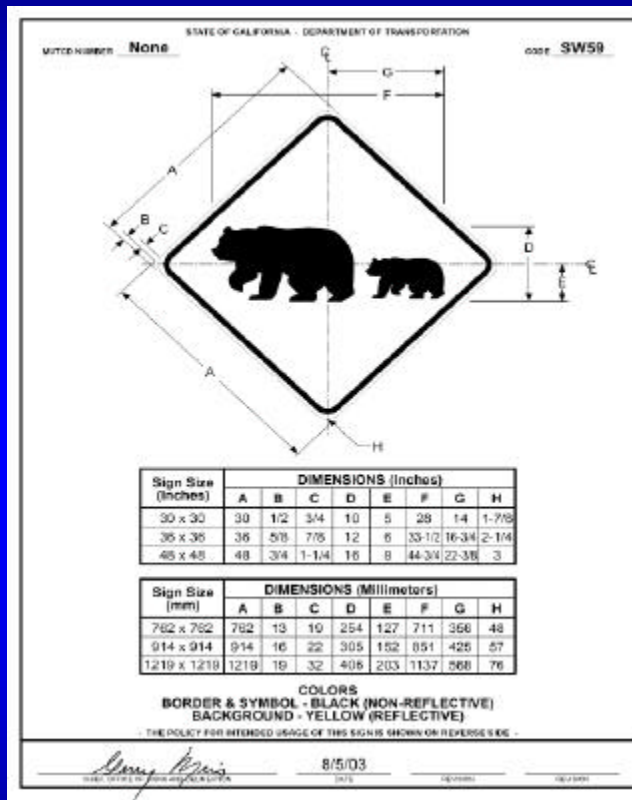


CA Supplement Includes:

- **MUTCD content changes, revisions and enhancements**
- **TCD related chapters of the Traffic Manual**
- **Traffic Sign Specification sign sketches and policies**
- **Caltrans TCD related TOPD's and memos**
- **CTCDC's Light Rail Traffic Manual**



Traffic Sign Specifications



Specification

POLICY: SW59

The Migrating Bears Symbol sign (SW59) may be used in advance of an area known to be inhabited by bear and there have been reported instances where bears are crossing the roadway.

The NEXT ____ MILES supplemental plate (W71) may be used below the SW59 sign on roadways where there have been random occurrences over a substantial distance. Placement should be, at approximately 8 km (5 mile) intervals, or when intersecting major traffic generators.

Policy



Traffic Sign Specifications Update

- 523 sign specs instead of 958
 - 276 signs adopted from MUTCD
 - 159 signs deleted
-
- No Policies
 - All policies in CA Supp only
 - Now all specs available on web in pdf as an alternate to published version



Traffic Sign Specifications



383 Signs
40% Signs



958 Signs
60% Closet Signs



CA Only Sign Sketches

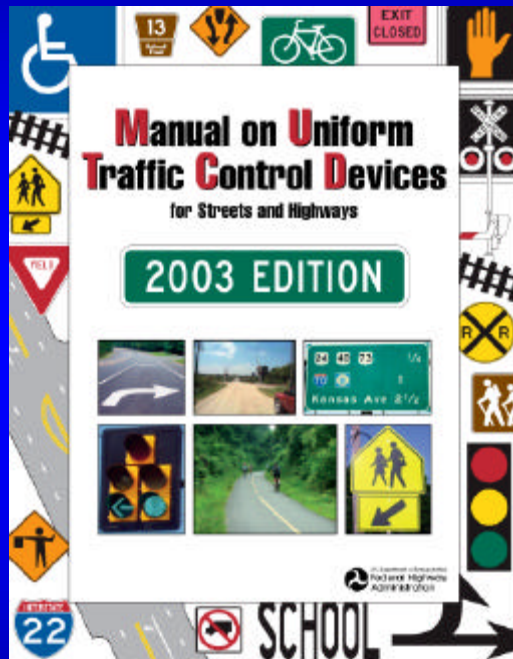
Figure 2C-101, California Warning Signs (Sheet 4 of 5)



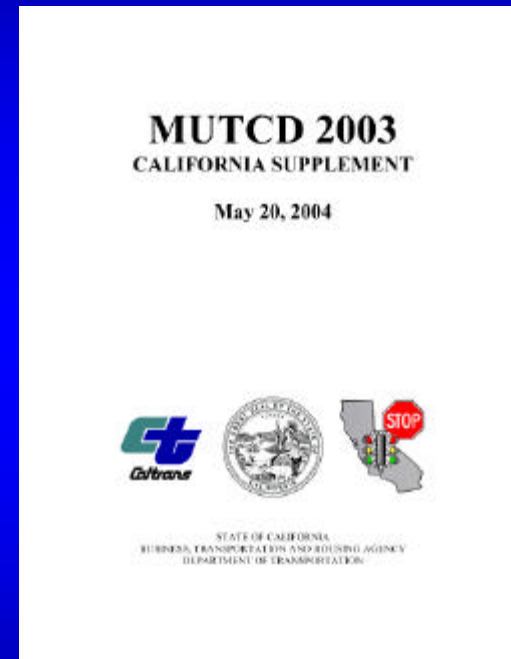
Figure 2D-101, California Guide Signs (Sheet 14 of 15)



All Officially Approved Signs are included in...



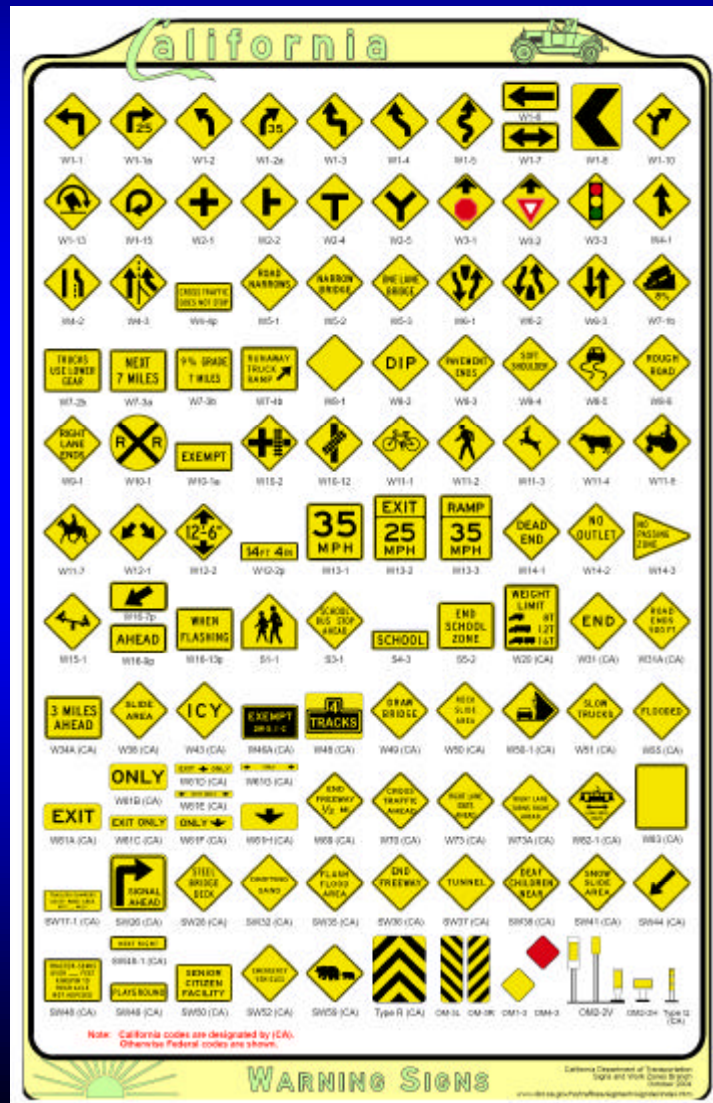
+



**Any sign not in either of these two documents
is not an officially approved sign**

2004 Uniform Sign Chart

Now Available!!!



Includes most common
MUTCD and CA Signs

Next Update will include all
officially approved
MUTCD and CA Signs

MUTCD & CA Sign Codes

MUTCD Codes

D

EM

G

I

M

R, RA, RG, RL, RM, RS,
RW

S

W

CA Codes

C

G

R

S, SC, SG, SR, SW

W

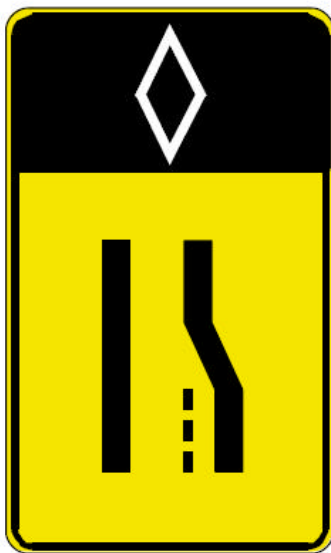
MUTCD & CA Sign Codes

California (CA) Code	MUTCD Code	Title of Sign
W56	W1-7	Two-Direction Large Arrow
W57	W1-6	One-Direction Large Arrow
W58	W12-1	Double Arrow
W59	W4-1	Merge

MUTCD Code “-” Hyphen

CA Code Sequence Numbering

MUTCD & CA Signs



W11-1

CA Code



W11-1

MUTCD Code

Same code

- G20-1
- R2-4
- R6-3
- R6-3A
- S1-1
- S3-1
- W11-1



Duplicate Sign Codes

CA Supplement



MUTCD



Duplicate Sign Codes

CA Supplement



MUTCD



Duplicate Sign Codes

CA Supplement



S1-1



S3-1

MUTCD



S1-1



S3-1

CA Supp use of Sign Codes

MUTCD 2003 California Supplement Page 2C-3

Table 2C-101. List of California Warning Signs (Sheet 2 of 5)

California (CA) Code	MUTCD Code	Title of Sign	Supplement Section	MUTCD Section
W30A	W7-4b	RUNAWAY TRUCK RAMP Arrow	2C.13	2C.13
W30B	None	DEEP GRAVEL	2C.13	None
W30C	None	RIGHT(LEFT) EXIT	2C.13	None
W31	None	END	2C.21	None
W31A	None	ROAD ENDS ____ FT	2C.21	None
W32	W8-2	DIP	None	2C.23
W33	W8-8	ROUGH ROAD	2C.102	None
W34	W12-2	Low Clearance	2C.22	2C.22
W34A	None	Distance Ahead Plaque	2B.49, 2C.22,	None

For CA signs without MUTCD codes, Supp uses CA Codes and identifies it as W30C (CA Code)

For CA signs with MUTCD codes, Supp uses MUTCD Codes and identifies it as W8-2

CA Code W32 is not used in the Supp except this table and will be deleted from all Caltrans documents in future

Cross-Reference Sign Table

(Courtesy: May be deleted in future)

MUTCD 2003 California Supplement

Page 2C-3

Table 2C-101. List of California Warning Signs (Sheet 2 of 5)

California (CA) Code	MUTCD Code	Title of Sign	Supplement Section	MUTCD Section
W30A	W7-4b	RUNAWAY TRUCK RAMP Arrow	2C.13	2C.13
W30B	None	DEEP GRAVEL	2C.13	None
W30C	None	RIGHT(LEFT) TURN	2C.13	None
W31	None	END	2C.21	None
W31A	None	ROAD ENDS	2C.21	None
W32	W8-2	DIP	None	2C.23
W33	W8-8	ROUGH ROAD	2C.102	None
W34	W12-2	Low Clearance	2C.22	2C.22
W34A	None	Distance Ahead	2B.49, 2C.22, 2C.45	None
W34B	W12-2P	___ FT ___ IN	2C.22	2C.22
W34C	None	CAUTION VERTICAL CLEARANCE ___' ___" Arrow	2C.22	None
W36	W5-3	ONE LANE BRIDGE	2C.17	2C.17, 5C.06
W37	W8-1	BUMP	None	2C.23
W38	None	SLIDE AREA	2C.105	None
W41	W3-3	Signal Ahead	2C.29, 4D.20, 4K.102	2C.29
W41A	W3-3a	SIGNAL AHEAD	2C.29	2C.29
W42	W8-5	Slippery When Wet	None	2C.27
W43	None	ICY	2C.103	None
W44	W6-3	Two-Way Traffic	2C.34, 3B.07,	2C.19, 2C.34,



Cross-Reference Sign Table

(Courtesy: May be deleted in future)

MUTCD 2003 California Supplement

Page 2C-3

Table 2C-101. List of California Warning Signs (Sheet 2 of 5)

California (CA) Code	MUTCD Code	Title of Sign	Supplement Section	MUTCD Section
W30A	W7-4b	RUNAWAY TRUCK RAMP Arrow	2C.13	2C.13
W30B	None	DEEP GRAVEL	2C.13	None
W30C	None	RIGHT(LEFT) EXIT	2C.13	None
W31	None	END	2C.21	None
W31A	None	ROAD ENDS - FT	2C.21	None
W32	W8-2	DIP	None	2C.23
W33	W8-8	ROUGH	2C.102	None
W34	W12-2	Low C	2C.22	2C.22
W34A	None	Distan	2B.49, 2C.22, 2C.45	None
W34B	W12-2P	___ F	2C.22	2C.22
W34C	None	CAUTION	2C.22	None
W36	W5-3	ONE L	2C.17	2C.17, 5C.06
W37	W8-1	BUMP	None	2C.23
W38	None	SLIDE AREA	2C.105	None
W41	W3-3	Signal Ahead	2C.29, 4D.20, 4K.102	2C.29
W41A	W3-3a	SIGNAL AHEAD	2C.29	2C.29
W42	W8-5	Slippery When Wet	None	2C.27
W43	None	ICY	2C.103	None
W44	W6-3	Two-Way Traffic	2C.34, 3B.07,	2C.19, 2C.34,



W31

Cross-Reference Sign Table

(Courtesy: May be deleted in future)

MUTCD 2003 California Supplement

Page 2C-3

Table 2C-101. List of California Warning Signs (Sheet 2 of 5)

California (CA) Code	MUTCD Code	Title of Sign	Supplement Section	MUTCD Section
W30A	W7-4b	RUNAWAY TRUCK RAMP Arrow	2C.13	2C.13
W30B	None	DEEP GRAVEL	2C.13	None
W30C	None	RIGHT(LEFT) EXIT	2C.13	None
W31	None	END	2C.21	None
W31A	None	ROAD ENDS ___ FT	2C.21	None
W32	W8-2	DIP	None	2C.23
W33	W8-8	ROUGH ROAD	2C.102	None
W34	W12-2	Low Clearance	2C.22	2C.22
W34A	None	Distance Ahead Plaque	2B.49, 2C.22, 2C.45	None
W34B	W12-2P	___	2C.22	2C.22
W34C	None	CAUTION	2C.22	None
W36	W5-3	ONE	2C.17	2C.17, 5C.06
W37	W8-1	BUMP	None	2C.23
W38	None	SLID	2C.105	None
W41	W3-3	Signa	2C.29, 4D.20, 4K.102	2C.29
W41A	W3-3a	SIGN	2C.29	2C.29
W42	W8-5	Slipp	None	2C.27
W43	None	ICY	2C.103	None
W44	W6-3	Two-Way Traffic	2C.34, 3B.07,	2C.19, 2C.34,



Using the MUTCD

What's the difference between:

- “Stop Ahead” Sign
- “STOP AHEAD” Sign



W3-1



W3-1a

Legal References Included

- California Vehicle Code (242 References)
- California Building Standards Code
- California Business and Professions Code
- California Code of Regulations
- California Education Code
- California Government Code
- California Health and Safety Code
- California Streets and Highways Code

TOC Comparison

MUTCD

- 1 General Provisions
- 2 Signs
- 3 Markings
- 4 Highway Traffic Signals
- 5 Traffic Control Devices for Low Volume Roads
- 6 Temporary Traffic Control
- 7 Traffic Controls for School Areas
- 8 Traffic Control for Highway-Rail Grade Crossings
- 9 Traffic Controls for Bicycle Facilities
- 10 Traffic Controls for Highway-LRT Grade Crossings

Traffic Manual

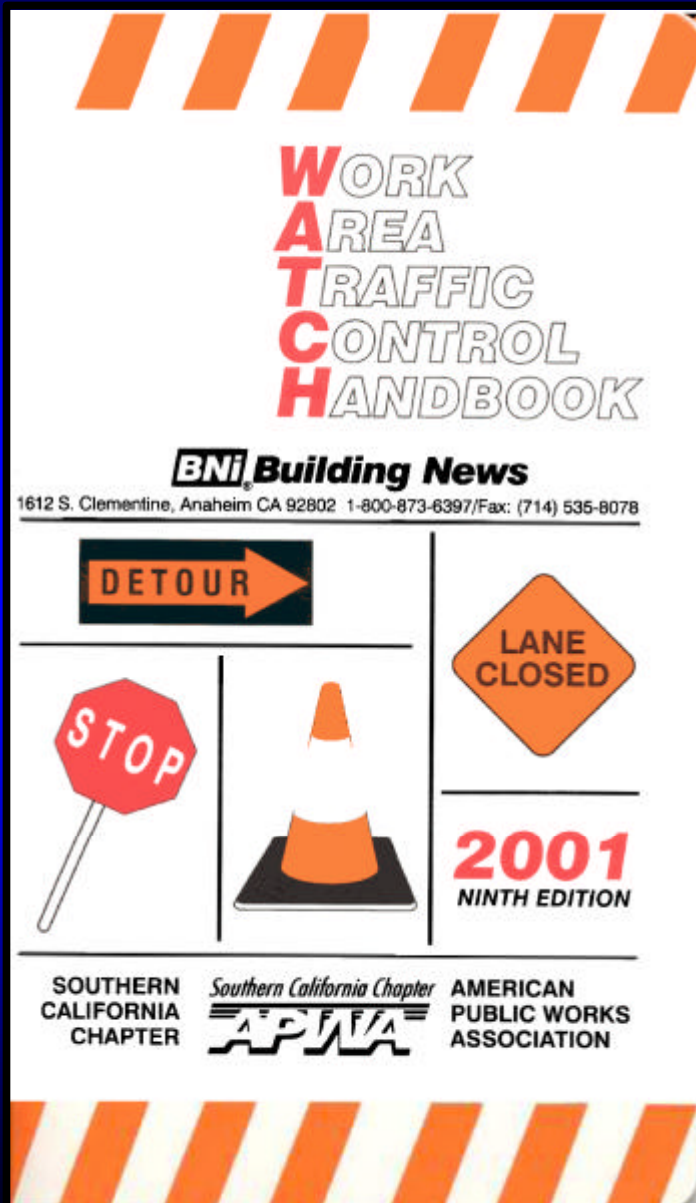
- 1 General Information
- 2 Traffic Volume Systems
- 3 Accident and Roadway Records
- 4 Signs
- 5 Traffic Controls for Construction & Maintenance Work Zones
- 6 Markings
- 7 Traffic Safety Systems
- 8 Regulations
- 9 Traffic Signals and Lighting
- 10 School Area Pedestrian Safety
- 11 Rules and Regulations
- 12 Bikeway Signs and Markings

(Note : Topics in yellow are non-TCDs)

When TM will be obsolete?

- **When Traffic Manual Chapter 7 & 9 are added to HDM**
- **HDM Change # 8 target is May 2005**
- **It will include deletion of TCD topics from HDM Chapter 1000**

Status of WATCH?



SOUTHERN CALIFORNIA CHAPTER *Southern California Chapter* AMERICAN PUBLIC WORKS ASSOCIATION

APWA

UNIFORM PRACTICES AND UTILITY COORDINATION COMMITTEE
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Linscott, Law and Greenspan
BNi Publications, Inc.
University of California ITS

GRAPHICS
Eric Mahoney
Robert O. Wright
Rod Yabut

Not an official publication

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| 6 Temporary TC | • Greg Edwards (916-654-3507)
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| 9 Bicycle Facilities | • Richard Haggstrom (916-654-6600)
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| 10 LRT Grade Crossings | • CPUC (213-576-1399)
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TM/MUTCD Layout

Traffic Manual		SIGNS		4-0.1
				1-1006
CHAPTER 4				
TABLE OF CONTENTS				
<i>Index No.</i>		<i>Page No.</i>	<i>Date</i>	
4-01	INTRODUCTION AND GENERAL STANDARDS.....	4-1	January, 1996	
4-01.1	Functions of Signs.....	4-1	January, 1996	
4-01.2	Scope of Sign Standards.....	4-1	November, 1982	
4-01.3	Legal Authority.....	4-1	January, 1996	
4-01.4	Standardization of Application.....	4-1	November, 1982	
4-01.5	Variable Sign Messages.....	4-2	November, 1982	
4-01.6	Excessive Use of Signs.....	4-2	November, 1982	
4-01.7	Classification of Signs.....	4-2	January, 1996	
4-01.8	Standardization of Signs.....	4-2	November, 1982	
4-01.9	Design.....	4-3	November, 1982	
4-01.10	Shapes.....	4-3	January, 1996	

- Traffic Manual:
Chapters, Sections and Subsections.

For Example:

4-01.3 --> Chapter 4

Section 01

Subsection 3

2003 Edition		Page TC2-1	
PART 2. SIGNS			
TABLE OF CONTENTS			
		<u>Page</u>	
CHAPTER 2A. GENERAL			
Section 2A.01	Function and Purpose of Signs	2A-1	
Section 2A.02	Definitions	2A-1	
Section 2A.03	Standardization of Application.....	2A-1	
Section 2A.04	Excessive Use of Signs.....	2A-1	
Section 2A.05	Classification of Signs.....	2A-2	
Section 2A.06	Design of Signs	2A-2	
Section 2A.07	Changeable Message Signs	2A-2	
Section 2A.08	Retroreflectivity and Illumination	2A-3	
Section 2A.09	Minimum Retroreflectivity Levels.....	2A-5	
Section 2A.10	Shapes.....	2A-5	
Section 2A.11	Sign Colors.....	2A-5	

- MUTCD:
Parts, Chapters and Sections.

For Example:

2A.06 --> Part 2

Chapter A

Section 06

CA Supplement Format

- **Format is similar to the MUTCD for comparison**
- **Follows MUTCD text headings**
- **Follows MUTCD Dual units: Metric (English)**
- **Metric message on TCDs prohibited, except per CVC 21351.3**

CA Supplement Format

- Supplement supersedes the MUTCD
- First go to Supplement then the MUTCD
- Supplement silence on any MUTCD topic means adoption (for the exact MUTCD version it is tied to)

CA Supplement Format

MUTCD 2003 California Supplement

Page 2C-10

Figure 2C-1. Horizontal Alignment Signs

Standard:

No sign shall have a metric unit or message, except per CVC 21351.3. Hence, the following signs shall not be used in California with metric messages unless specifically allowed per CVC 21351.3.

Combination Turn/Advisory Speed (W1-1a) Metric version.

Combination Curve/Advisory Speed (W1-2a) Metric version.

Section 2C.07 Combination Horizontal Alignment/Advisory Speed Signs (W1-1a, W1-2a)

Guidance:

In Paragraph 2 (“When used...”) first sentence, the phrase “and shall be installed” is changed to “and Guidance:

In Paragraph 5 (“Spacing of Chevron Alignment signs...”), the phrase “at least two in view” is changed to “at least three in view”.

Figure 2C-2. Vertical Grade Signs

Standard:

No sign shall have a metric unit or message, except per CVC 21351.3. Hence, the following signs shall not be used in California with metric messages unless specifically allowed per CVC 21351.3.

May 20, 2004

Specific version of the MUTCD, the Supplement is linked to and the date of adoption

CA Supplement Format

MUTCD 2003 California Supplement

Page 2D-33

Section 2D.37 Location of Distance Signs

The following is added to this section:

Guidance:

The Distance (CA Code G5 Series) signs should be placed at approximate 16 km (10 mi) intervals, unless the destinations have changed. Distances to the same destinations should not be shown more frequently than at 8 km (5 mi) intervals.

Option:

The Destination and Street Name with Arrow (CA Code G8 Series) signs may be used in advance of conventional highway intersections.

CA Supplement TOC

MUTCD 2003 California Supplement

Page TC2-7

CHAPTER 2H. RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

Section 2H.02	Application of Recreational and Cultural Interest Area Signs	2H-1
Section 2H.08	Placement of Recreational and Cultural Interest Area Symbol Signs	2H-7
Section 2H.09	Destination Guide Signs	2H-7
Section 2H.101	Historical Landmark Signs (CA Code G13-1, G13-2 and G14)	2H-7
Section 2H.102	POINT OF HISTORICAL INTEREST Sign (CA Code G15)	2H-8
Section 2H.103	Historic Route Signs (CA Code SG2, SG2A, S18 and S25)	2H-9
Section 2H.104	Historic Bridge Signs (CA Codes S29, S29-1 and S29-2)	2H-9

CHAPTER 2I. EMERGENCY MANAGEMENT SIGNS

No Comments	2I-1
-------------	------

Red box: MUTCD sections modified or enhanced by Supplement

Blue box: CA created sections, no co-related section in the MUTCD

Green box: MUTCD chapter adopted as-is for California

CA Supplement TOC

CHAPTER 2B.

REGULATORY SIGNS

Figure 2B-101	California Regulatory Signs	2B-9
Figure 2B-102	U-Turn Signs for Signalized Intersections with Separate Turn Phase	2B-25
Figure 2B-13 (CA)	Examples of ONE WAY Signing for Divided Highways with Medians of 9 m (30 ft) or Greater	2B-34
Figure 2B-14 (CA)	Examples of ONE WAY Signing for Divided Highways with Medians Less Than 9 m (30 ft)	2B-35

Red box: CA created figures, no co-related figure in the MUTCD

Green box: MUTCD figures modified for CA applications

Effective/Target Dates

- MUTCD + CA Supplement apply to all new TCD installations on and after May 20, 2004
- **EXCEPTION:** If significant delay or significant costs involved, engineer responsible for justifying non-compliance. This includes projects in all stages from planning to construction



Effective/Target Dates

- Existing TCDs becoming non-compliant subject to compliance periods (2 years to end of USL)
- Majority of these devices can remain in place through end of useful service life
- For fiscal responsibility, existing inventory of non-compliant TCDs in stock prior to May 20, 2004 may be used
- If any existing TCD is modified or relocated, it shall be brought into compliance with current standards
- Compliance periods are posted on Supplement web site for a handful of TCDs (20 R&W signs) that require them

TCDs Needing Compliance Example

CA SW1-1 sign (Color is B/Y)
Arrow points in direction that
non-stopping traffic is moving



MUTCD 2000 W4-4P

Arrow points in direction from which
non-stopping traffic is approaching

Use MUTCD 2003 W4-4P



With alternate message
TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP
or ONCOMING TRAFFIC DOES NOT STOP

How to determine 'USL'



For Now:

Engineering Judgement

In Future:

Minimum Levels of
Retroreflectivity

MUTCD 2003 Prop Rev. No.2



CA Supplement Printing

- Electronic version available on the Supplement web site
- Printed version not currently available
- Supplement may be downloaded and printed




CA Supplement Web Site



Use NotifyList feature to receive automatic e-mail notification of web site updates (#194 subscribers)

Future Plans

- **CTCDC recommended combining MUTCD and CA Supplement into a single document**
 - **Caltrans agreed**
 - **Schedule and format is finalized**
 - **Part 6 and 7 are top priorities**
 - **Process will be extended to entire MUTCD and CA Supplement**
- 
- The image shows the front cover of the 'Manual of Traffic Control for Streets' (MUTCD) for the year 2003. The cover is white with a blue border at the top. It features several traffic signs: a blue square sign with a white wheelchair symbol, a yellow diamond sign with a black silhouette of a person walking, a red triangle yield sign, a white diamond sign with a black silhouette of a person walking, and a blue and red circular sign with the number 22. The title 'Manual of Traffic Control for Streets' is printed in red and black, with '2003' in a green box. The background of the cover shows a road with a crosswalk and a traffic light.

